Listing of Claims

1. (previously presented) A computer readable medium including computer executable code stored thereon, the code being executable by a processor to perform a method for estimating power consumption of an integrated circuit comprising:

simulating logic of basic and mega cells of the integrated circuit;

estimating a first value of electric power consumed by said mega cells based on said logic simulations and pre-established power consumption data, including estimating a current consumed by the mega cells by obtaining logic states for each mega cell, determining an average operation frequency for each logic state, and determining an alternating current component and a direct current component for each logic state to calculate said current consumed by the mega cells;

estimating a second value of electric power consumed by said basic cells based on said logic simulations and pre-established power consumption data, including estimating a current consumed by the basic cells; and

combining said first and second values to obtain the power consumption of the integrated circuit.

2. (original) A computer readable medium as recited in claim 1, wherein the computer readable medium comprises a floppy disk.

3. (original) A computer readable medium as recited in claim 2, wherein the floppy disk comprises a 3.5 inch diskette.

4. (previously presented) A computer readable medium as recited in claim 1, wherein the computer readable medium comprises a compact disk.

5. (original) A computer readable medium as recited in claim 4, wherein the compact disk is a read-only disk.

6. (original) A computer readable medium as recited in claim 4, wherein the compact disk is a read/write disk.

7. (original) A computer readable medium as recited in claim 1, wherein the computer readable medium comprises a DVD.

8. (original) A computer readable medium as recited in claim 1, wherein the computer executable code is one of compressed and noncompressed.

9. (previously presented) A computer readable medium including computer executable code stored thereon, the code being executable by a processor to perform a method for estimating electric power consumed by basic cells and mega cells of an integrated circuit to estimate total power consumed by the integrated circuit, the method comprising:

simulating logic of said basic cells and said mega cells, wherein each function of each mega cell for logic simulation is defined by hardware description language;

estimating a first value of electric power consumed by said basic cells based on logic simulation results from said logic simulations and pre-established power consumption data for

each logic state of each input and output terminal of said basic cells, including estimating a current consumed by the basic cells;

estimating a second value of electric power consumed by said mega cells based on logic simulation results from said logic simulations and pre-established power consumption data for said logic states, variables in the function description, and said operating frequencies at each input and output terminal of each mega cell, including estimating a current consumed by the mega cells by obtaining logic states for each mega cell, determining an average operation frequency for each logic state, and determining an alternating current component and a direct current component for each logic state to calculate said current consumed by the mega cells; and

adding said first and said second values of the power consumption to determine the total power consumption for the integrated circuit.

10. (original) A computer readable medium as recited in claim 9, wherein the computer readable medium comprises a floppy disk.

11. (original) A computer readable medium as recited in claim 10, wherein the floppy disk comprises a 3.5 inch diskette.

12. (previously presented) A computer readable medium as recited in claim 9, wherein the computer readable medium comprises a compact disk.

13. (original) A computer readable medium as recited in claim 12, wherein the compact disk is a read-only disk.

14. (original) A computer readable medium as recited in claim 12, wherein the compact disk is a read/write disk.

15. (original) A computer readable medium as recited in claim 9, wherein the computer readable medium comprises a DVD.

16. (original) A computer readable medium as recited in claim 9, wherein the computer executable code is one of compressed and noncompressed.

17. (previously presented) A computer readable medium including computer executable code stored thereon, the code being executable by a processor to perform a method for estimating power consumption of an integrated circuit, the method comprising:

compiling a table which tabulates data of electric power consumed by mega cells of the integrated circuit during operation;

simulating logic of said mega cells and basic cells of the integrated circuit, wherein data from said table is used when simulating logic of said mega cells;

estimating a first value of electric power consumed by said mega cells based on results from said logic simulations, including estimating a current consumed by the mega cells by obtaining logic states for each mega cell, determining an average operation frequency for each logic state, and determining an alternating current component and a direct current component for each logic state to calculate said current consumed by the mega cells;

estimating a second value of electric power consumed by said basic cells based on logic

simulation results from said simulations and pre-established power consumption data for each logic state at each input and output terminal of said basic cells, including estimating a current consumed by the basic cells; and

adding said first and said second values to obtain the power consumption of the integrated circuit.

18. (original) A computer readable medium as recited in claim 17, wherein the computer readable medium comprises a floppy disk.

19. (original) A computer readable medium as recited in claim 18, wherein the floppy disk comprises a 3.5 inch diskette.

20. (previously presented) A computer readable medium as recited in claim 17, wherein the computer readable medium comprises a compact disk.

21. (original) A computer readable medium as recited in claim 20, wherein the compact disk is a read-only disk.

22. (original) A computer readable medium as recited in claim 20, wherein the compact disk is a read/write disk.

23. (original) A computer readable medium as recited in claim 17, wherein the computer readable medium comprises a DVD.

24. (original) A computer readable medium as recited in claim 17, wherein the computer executable code is one of compressed and noncompressed.

25. (previously presented) A programmable computer for estimating power consumption of an integrated circuit comprising:

processor;

storage media for storing computer executable code executable by the processor to perform a method for estimating power consumption of an integrated circuit, the method including:

carrying out logic simulations of circuit data for basic cells and mega cells of the integrated circuit;

estimating a first value of electric power consumed by said mega cells based on the results of said logic simulations and pre-established power consumption data, including estimating a current consumed by the mega cells by obtaining logic states for each mega cell, determining an average operation frequency for each logic state, and determining an alternating current component and a direct current component for each logic state to calculate said current consumed by the mega cells;

estimating a second value of electric power consumed by said basic cells based on the results of said logic simulations and pre-established power consumption data, including estimating a current consumed by the basic cells; and

combining said first and second values of electric power consumed by said mega and basic cells so as to obtain the power consumption of the integrated circuit.

26. (original) A programmable computer as recited in claim 25, further comprising

a read/write unit in which a computer readable media including computer executable code can be input, the computer executable code being downloaded from the computer readable media to the storage media via the read/write unit for execution by the processor.

27. (original) A programmable computer as recited in claim 26, wherein the computer executable code is stored on the computer readable media in compressed format and is decompressed and downloaded to the storage media.

28. (original) A programmable computer as recited in claim 26, wherein the computer readable media comprises at least one of a floppy disk, a CD, DVD and an Internet server.

29. (previously presented) A programmable computer for estimating power consumption of an integrated circuit, comprising:

processor;

storage media for storing computer executable code executed by the processor to perform a method for estimating power consumption of an integrated circuit, the method including:

carrying out logic simulations of circuit data for basic cells and mega cells of the integrated circuit;

estimating a first value of electric power consumed by said basic cells, including estimating a current consumed by the basic cells, said estimate of the first value being based on logic simulation results obtained by said simulation means and pre-established power

consumption data for each logic state at each input and output terminal of said basic cells;

estimating a second value of electric power consumed by said mega cells, said estimate of the second value being based on logic simulation results obtained by said simulation means and pre-established power consumption data for each logic state, variables in a function description, and said operating frequencies of said mega cells at each input and output terminal, including estimating a current consumed by the mega cells by obtaining logic states for each mega cell, determining an average operation frequency for each logic state, and determining an alternating current component and a direct current component for each logic state to calculate said current consumed by the mega cells; and

adding said first and second values of power consumed by said basic and mega cells so as to obtain the power consumption of the integrated circuit.

30. (original) A programmable computer as recited in claim 29, further comprising

a read/write unit in which a computer readable media including computer executable code can be input, the computer executable code being downloaded from the computer readable media to the storage media via the read/write unit for execution by the processor.

31. (original) A programmable computer as recited in claim 30, wherein the computer executable code is stored on the computer readable media in compressed format and is decompressed and downloaded to the storage media.

32. (original) A programmable computer as recited in claim 30, wherein the computer readable media comprises at least one of a floppy disk, a CD, DVD and an Internet server.

33. (previously presented) A programmable computer for estimating power consumption of an integrated circuit comprising:

processor;

storage media for storing computer executable code executed by the processor to perform a method for estimating power consumption of an integrated circuit, the method including:

tabulating data of electric power consumed by mega cells of the integrated circuit during operation;

carrying out logic simulations of circuit data for basic cells of the integrated circuit and said mega cells, wherein data from said table is used when simulating logic of said mega cells;

estimating a first value of electric power consumed by said mega cells, including estimating a current consumed by the mega cells by obtaining logic states for each mega cell, determining an average operation frequency for each logic state, and determining an alternating current component and a direct current component for each logic state to calculate said current consumed by the mega cells, said estimate of the first value being based on logic simulation results;

estimating a second value of electric power consumed by said basic cells, including estimating a current consumed by the basic cells, said estimate of the second value being based on logic simulation results and pre-established power consumption data for logic states for each input and output terminal of said basic cells; and

adding said first and second values of the power consumed by said mega and basic cells so as to obtain the power consumption of the integrated circuit.

34. (original) A programmable computer as recited in claim 33, further comprising

a read/write unit in which a computer readable media including computer executable code can be input, the computer executable code being downloaded from the computer readable media to the storage media via the read/write unit for execution by the processor.

35. (original) A programmable computer as recited in claim 34, wherein the computer executable code is stored on the computer readable media in compressed format and is decompressed and downloaded to the storage media.

36. (original) A programmable computer as recited in claim 34, wherein the computer readable media comprises at least one of a floppy disk, a CD, DVD and an Internet server.

37. (previously presented) A programmed computer which is programmed to perform a method for estimating power consumption of an integrated circuit, the method comprising:

simulating logic of basic and mega cells of the integrated circuit;

estimating a first value of electric power consumed by said mega cells based on said logic simulations and pre-established power consumption data, including estimating a current consumed by the mega cells by obtaining logic states for each mega cell, determining an average operation frequency for each logic state, and determining an alternating current component and a direct current component for each logic state to calculate said current consumed by the mega cells;

estimating a second value of electric power consumed by said basic cells based on said

logic simulations and pre-established power consumption data, including estimating a current consumed by the basic cells; and

combining said first and second values to obtain the power consumption of the integrated circuit.

38. (previously presented) A programmed computer which is programmed to perform a method for estimating electric power consumed by basic cells and mega cells of an integrated circuit to estimate total power consumed by the integrated circuit, the method comprising:

simulating logic of said basic cells and said mega cells, wherein each function of each mega cell for logic simulation is defined by hardware description language;

estimating a first value of electric power consumed by said basic cells based on logic simulation results from said logic simulations and pre-established power consumption data for each logic state of each input and output terminal of said basic cells, including estimating a current consumed by the basic cells;

estimating a second value of electric power consumed by said mega cells based on logic simulation results from said logic simulations and pre-established power consumption data for said logic states, variables in the function description, and said operating frequencies at each input and output terminal of each mega cell, including estimating a current consumed by the mega cells by obtaining logic states for each mega cell, determining an average operation frequency for each logic state, and determining an alternating current component and a direct current component for each logic state to calculate said current consumed by the mega cells; and

adding said first and said second values of the power consumption to determine the total power consumption for the integrated circuit.

39. (previously presented) A programmed computer which is programmed to perform a method for estimating power consumption of an integrated circuit, the method comprising:

compiling a table which tabulates data of electric power consumed by mega cells of the integrated circuit during operation;

simulating logic of said mega cells and basic cells of the integrated circuit, wherein data from said table is used when simulating logic of said mega cells;

estimating a first value of electric power consumed by said mega cells based on results from said logic simulations, including estimating a current consumed by the mega cells by obtaining logic states for each mega cell, determining an average operation frequency for each logic state, and determining an alternating current component and a direct current component for each logic state to calculate said current consumed by the mega cells;

estimating a second value of electric power consumed by said basic cells based on logic simulation results from said simulations and pre-established power consumption data for each logic state at each input and output terminal of said basic cells, including estimating a current consumed by the basic cells; and

adding said first and said second values to obtain the power consumption of the integrated circuit.

40. (previously presented) A computer readable medium as recited in claim 1, wherein the alternating current component of said current consumed by the mega cells for each logic state is determined by utilizing a predetermined constant value and the average operation frequency for the logic state.